Remarks

The above Amendments and these Remarks are in reply to the Office action mailed October 8, 2002. Claims 1-11 are presented herewith for consideration.

Title

The title has been amended. It is therefore respectfully requested that the objection to the title be withdrawn.

Drawings

Enclosed herewith are substitute drawings. It is therefore respectfully requested that the objection to the drawings be withdrawn.

Co-Pending Applications

The Examiner has requested that the status of the co-pending applications cited on Page 8 of the application be updated. The applications are currently in prosecution and there are no additional changes to the serial numbers cited in the application.

Information Disclosure Statement

Submitted herewith is a copy of Paper No. 7, the Information Disclosure indicated by the Examiner to have been filed, but not received, as of the date of the mailing of the Office Action. It is respectfully submitted that not fee is due with this submission as the IDS was timely filed prior to the issuance of the Office Action dated 10/8/2002.

Rejection of Claims 1 - 11 Under 35 U.S.C. §103(a)

It is respectfully submitted that claims 1-11 are not obvious under 35 U.S.C. §103(a) over International Application No. WO 00/29998 to Birkler ("*Birkler et al.*") in view of U.S. Patent No. 5,832,519 to Bowen ("*Bowen et al.* ").

Birkler et al. does not teach or suggest "...a plurality of change logs ...[on] a ... system" and hence can not teach or suggest the invention to one of average skill in the art. Rather, *Birkler et al.* teaches a one-to-one synchronization system using a single change log, and hence does not motivate one of average skill to seek to develop the invention defined in the present application.

Claims 1 - 7

It is respectfully submitted that: (1) a *prima facie* rejection of the claims under 35 U.S.C. §103 is not set forth since *Birkler et al.,* even as interpreted by the Examiner, does not teach those limitations of claim 1 which it is alleged to teach; (2) based on the teachings of *Birkler et al.* and *Bowen et al.,* one of average skill in the art would not be led to combine the teachings of the references; and (3) even were the teachings of the references combined, the resulting combination would not meet the limitations of the claimed invention.

(1) Birkler et al., even as interpreted by the Examiner, does not teach those limitations of claim 1 which it is alleged to teach. As such it fails as a primary reference in any analysis of obviousness under 35 U.S.C. §103. It is respectfully noted that the Examiner has admitted that "...Birkler does not teach 'aggregate log, applying said aggregate log to said application data to update said application data'...". As understood, this admission in the Examiner's Office Action addresses the steps of claim 1 calling for "adding said first change log to an aggregate log.... and applying said aggregate log to said application data to update said application data".

Even using the Examiner's interpretation of *Birkler et al.*, the reference fails to disclose not only these admittedly missing claim limitations, but even those alleged by the Examiner to be taught. In particular, claim 1 calls for the step of "downloading a first change log *of a plurality of change logs* from a server system." (Emphasis supplied). *Birkler et al.* fails to teach any "plurality of change logs" as defined in claim 1, and hence fails to teach the step of "downloading a first change log of the plurality of change logs". In interpreting the teachings of *Birkler et al.*, the Examiner states this step is found in the teachings of *Birkler et al.* at Page 3, lines 13 – 17 and 21 – 25, further stating "...examiner interpreting change logs corresponds [sic] to *Birkler's* change log as detailed in Fig. 2, element 240, client device corresponds to first device, server system corresponds to second device as detailed in page 3, line 10...".

The portions of *Birkler et al.* cited by the Examiner make it clear that only one change log is present on either the first or second system in the synchronization process disclosed therein. *Birkler et al.*'s change log 240 is detailed in the description as comprising "... a log or register in which changes made to the device database 230 are temporarily stored." Page 7, lines 20-21. It is clear from Fig. 2 and the accompanying description of *Birkler et al.* that each device maintains only a single change log 240. Hence, there is no "plurality of change logs" as defined in claim 1 and the step of "downloading a first change log of the plurality of change logs" is not taught or suggested by *Birkler et al.* This is due to the fact that *Birkler et al.* describes a one-to-one synchronization between connected devices, and therefore one of average skill would understand that any change log stored on the device covers only the changes for a single device, so there is no need for downloading "a plurality of change logs".

Second, *Birkler et al.* does not teach or suggest the step of "...deleting said first change log." As noted above, *Birkler et al.* teaches only one change log. With respect to this log, *Birkler et al.* discloses only paring (or eliminating entries from) a change log, not deleting the entire log. The Examiner states that this limitation is met by the disclosure of *Birkler et al.* at page 7, lines 22-25 and page 12, lines 4-7. This section of the reference states: "the size of the change log 240 can be fixed

and *older changes can be pushed out of the change log 240 as new changes are added.*" (Emphasis added.) This section of the reference does not disclose "deleting the change log." Only keeping the log at a fixed size and deleting changes in the log. As noted above, the log is disclosed as a "register of changes," not individual changes. The second cited portion at page 12 calls for the synch engine to "perform a database update to the synch engine database in accordance with each returned entry" and further discloses incrementing a stored change counter. Like that portion of the disclosure cited at page 7, this latter portion of the disclosure does not disclose the step of "deleting said first change log" as defined in claim 1.

Third, *Birkler et al.* does not disclose the step of "...repeating said downloading, adding, and deleting steps for a next change log of said plurality of change logs until no additional change logs exist." As noted above, no "plurality of change logs" exists; therefore no "next change log" exists. *Birkler et al.* teaches downloading a single log with multiple changes, not multiple logs. Hence, this limitation of the claimed invention is not met because *Birkler et al.* teaches that the devices only download a single change log, and not a "next change log", because there is no "plurality of change logs" as taught by *Birkler et al.*

Because *Birkler et al.* teaches only a single change log, one of average skill in the art would not be led by the teachings of *Birkler et al.* to derive the invention as defined in claim 1. In particular, *Birkler et al.* is concerned with a one-to-one synchronization between two devices. In the present invention, using the server system, multiple devices synch to the same server system. Hence, the steps of aggregating and deleting the change logs would not be required in *Birkler et al.*

Were the Examiner to assert an interpretation of *Birkler et al.* that each individual data change (add, delete, modify, etc.) in a change log is itself a change log, that interpretation would be inconsistent with the teachings of *Birkler et al.* and the description of the use of that term in the present specification at, for example, p. 4, lines 10 – 17, p. 9 lines 1 – 11, p. 10 lines 1 – 2, and the reference as a whole.

(2) Based on the teachings of Birkler et al. and Bowen et al., one of average skill in the art would not be led to combine the teachings of the references.

The teachings of *Birkler et al.* with respect to synchronization of data between different systems, and those of *Bowen et al.* with respect to updating aggregate records in a database, contain no suggestion which would lead one of average skill to combine their respective teachings to derive the claimed invention.

The teachings of *Birkler et al.*, as discussed above, concern synchronization between individual devices.

Bowen et al., in contrast, describes updating aggregate records in a database and is specifically concerned with eliminating the lock time of such records. Aggregate records are database records described therein as: "...records which are semantically dependent on other records in the database..., aggregate data records are read and written more frequently than other records because they are modified every time one of their dependent records is modified...". (Col. 2, lines 43 – 47). In *Bowen et al.*, periodic updates of a base value and time stamp contained in the memory are updated with a log delta value. In essence, *Bowen et al.* defines applying an update from a change log (the "log" relation to the "base relation," where the "base relation" is, in fact, the database). In this system, delta values might be considered changes to a database. In *Bowen et al.*, the delta values are recorded such that application of more than one delta value to a base value will result in a summed change. Application of two data values to the same base value will, in essence, be similar to the application of a plurality of changes in a change log to the same field.

However, *Bowen et al.* does not disclose an aggregated change log which is derived from "a plurality of change logs." Once again, unless each individual change is considered as a "change log," an interpretation which would be inconsistent with both the specification of the present application and the *Birkler et al.* reference, only one memory of changes or delta values is maintained in *Bowen et al.*

Hence, one of average skill in the art would not be led by the teachings of *Bowen et al.* with respect to reducing the lock time of aggregate records to those of Bowen et al concerning synchronization of data between different devices. As such, there is no motivation in either reference which would lead one of average skill to provide the steps of "adding [a] first change log to an aggregate log," "deleting said first change log," or "applying said aggregate log to set application data to update said application data."

(3) Even were the teachings of the references combined, the resulting combination would not meet the limitations of the claimed invention.

As noted above, the teachings of Birkler et al do not provide the foundational teachings leading to the steps it is alleged to define in claim 1. Bowen et al. likewise does not teach the steps of the invention defined in claim 1 which it is alleged to teach. Neither reference provides for aggregating change logs, only updating records of a database. As such, even if the references were combined in the manner suggested by the examiner, at most, one would be left with a synchronization process wherein changes from a single change log are aggregated into another database. There would be no "aggregate log" resulting from a plurality of change logs which could be applied to application data.

Hence, it is respectfully submitted that claim 1, and claims 2-7 dependent therefrom, are not obvious in view of *Birkler et al.* and *Bowen et al.*

Claims 8 - 10

Further with the respect to independent claim 8, it is respectfully submitted that *Birkler et al.* fails to teach a number of the limitations contained therein.

In particular, Birkler et al. does not teach "a downloading routine for iteratively retrieving a plurality of change logs from a server system." As noted above, neither *Birkler et al.* nor *Bowen et al.* disclose "...a plurality of change logs". At most, each discloses a single change log having more than

one change contained therein. Hence, any downloading performed by *Birkler et al.* is not of "a plurality of change logs" nor done "iteratively".

In addition, neither *Birkler et al.* alone, or in combination with *Bowen et al.,* teaches a "...merging routine for iteratively aggregating the contents of said plurality of change logs into an aggregate log." As noted above, aside from the fact that there are no "plurality of change logs", in either reference, there is no teaching of aggregating the contents of a "plurality of change logs", only aggregating ones of a plurality of changes into a database.

Still further, as noted with respect to claim 1, there is no teaching of a "...change log deletion routine." *Birkler et al.* teaches only maintaining the size of a change log at a fixed size by deleting entries in a change log once the change log becomes too large. Given the aforementioned teachings, one of average skill would not be led to provide an "updating routine" as defined in claim 8, since there is no "aggregate log" to which to apply to application data as defined in claim 8.

Finally, there is no teaching in neither *Birkler et al.* nor *Bowen et al.* of "...an updating routine for applying the contents of said aggregate log to said application". As noted above, there is no aggregate log, as used in the claims, in the teachings of Bowen et al. Hence there is not teaching or suggestion of applying any aggregate change log to application data.

Hence, it is respectfully submitted that claim 8, and 9 - 10 dependent therefrom, are not obvious in view of *Birkler et al.* and *Bowen et al.*

Claim 11

Further with respect to claim 11, for the reasons set forth above with respect to claims 1 and 8, it is respectfully submitted that the steps of "...downloading a first change log of a plurality of change logs...", "...adding the first change log to an aggregate log," "...deleting said first change log...", "...repeating said downloading, adding, and deleting steps," and "... applying said aggregate log" are not disclosed by *Birkler et al.* and *Bowen et al.*

Birkler et al., even as interpreted by the Examiner, does not teach any limitations of claim 11. Moreover, based on the teachings of *Birkler et al.* and *Bowen et al.*, one of average skill in the art would not be led to combine the teachings of the references. Finally, even were the teachings of the references combined, the resulting combination would not meet the limitations of the claimed invention.

In addition, claim 11 has been amended to contain a limitation calling for "...downloading to the first client device..." and "...adding said first change log to an aggregate log on the first client device;" (emphasis supplied). It is respectfully submitted that in addition to the foregoing reasons *Birkler et al.* and *Bowen et al.* fail to teach the steps of downloading and adding where the aggregate log is contained "... on the first client device...".

Further with respect to claims 2 and 9, the rejection set forth in Paragraph 7 on page 6 of the Office Action is unclear. The Examiner sets forth that *Birkler et al.* allegedly teaches "...a system which including 'retrieving information for a valid item' [citation omitted], 'updating a location of said valid item in said map'[page 12, line 4-7]." The Examiner then states *"[o]n the other hand Bowen* teaches 'updating a map of said aggregate log, said map storing meta-data'[col 5, line 12-19], 'writing said item to said aggregate log'[col 4 line 45-50]." (Emphasis supplied).

Respectfully, the relevance of these statements to the claim 2 and 9 language is not set forth by the Examiner. Moreover, these statements bear no relation to the claim language of claim 9.

As understood, the Examiner appears to allege that some combination of the references teaches the steps set forth in claim 2, and by a further extension, the routines set forth in claim 9.

Initially, it is respectfully submitted that the rationale for combining these steps is not set forth by the Examiner. Moreover, the teachings of *Birkler et al.* and *Bowen et al.* with respect to those portions cited by the examiner do not support any allegation that the steps defined in claim 2, or the routines defined in claim 9, are disclosed therein.

Further, the Examiner has not pointed to any teachings in *Birkler et al.* and *Bowen et al.* where one of average skill would be lead to "repeat" the steps (a) – (d) set forth in claim 2. For this reason alone, the Examiner has failed to set forth a *prima facie* rejection.

Still further, the motivation to combine the completely separate teachings of the references is not present in the references themselves. As noted above, the references concern two distinct areas of technology – synchronization of information in differing devices and updating aggregate records in a database. The mere fact that databases of different types are used in the references does not support an assertion that there is a motivation to combine the teachings.

It is therefore respectfully submitted that the rejection with respect to 35 U.S.C. §103 as to claims 9 and 2, does not meet the *prima facie* requirements for a rejection based on obviousness.

Further with respect to claim 3, the Examiner alleges that "*Bowen* teaches a system which "including [sic] compacting said aggregate log if a compacted threshold is exceeded." It is noted, as set forth above, that *Bowen et al.* does not teach compacting an "aggregate log", but rather compacting the database that includes aggregate records, a term of art defined by the reference and not an "aggregate log" as used in the context of the description of this invention. Hence, for the reasons set forth above and these additional reasons, it is respectfully submitted claim 3 is not obvious over *Birkler et al.* and *Bowen et al.*

Further with respect to claim 10, the Examiner states that "... Bowen teaches a system which including 'aggregate log' [see fig 1-2]." As noted above, the alleged aggregate log is not an "aggregate log" of change logs, but an aggregate data record. Hence, for the reasons set forth above and these additional reasons, it is respectfully submitted that claim 10 is not obvious over *Birkler et al.* and *Bowen et al.*

Based on the above amendments and these remarks, reconsideration of claims 1 - 11 and consideration of claims 12 - 17 is respectfully requested.

The Examiner's prompt attention to this matter is greatly appreciated. Should further questions remain, the Examiner is invited to contact the undersigned attorney by telephone.

Enclosed is a PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. § 1.136 for extending the time to respond up to and including today, March 10, 2003.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: March 10, 2003

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